Japan Geoscience Union Meeting 2010
(May 23-28 2010 at Makuhari, Chiba, Japan)

HDS024-P03 Room: Convention Hall Time: May 25 17:15-18:45

Offshore active fault survey "Unzen fault group" (3) High resolution acoustic survey

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Tokai University performed high resolution geostratigraphic survery to confirm a formation, distribution, and displacement around the coastal area of the Unzen fault group. We use a parametric acoustic system which has 1)nallow beamwith, 2)wide secondary frequencies, 3)high pluse repetition rate, and 4)high resolution technical characters. Also we use an unrest sensor for decreasing the influence of the seawave. As a result, we were able to get a highly precise geostratigraphic record in a coastal area.
Result of the Tachibana Bay area: Nature of the mud sediment was distributed in the central part in the Tachibana Bay. And observed a good record to about 20m below from the sea bottoms, and also get the good information about fault formation and displacement. The reflector of the acoustic wave inquiry record in the Bay of Tachibana is very congruent with the peak of the susceptibility in the existing piston-coring data(Reprot for Unzen active fault survey in 2003). Also, by the record of the piston-coring spot, we can compare the lower reflector from Kikai Akahoya volcanic ashes (K-Ah). As a tomographic distribution characteristic, many north dip faults were confirmed in the central part - western part of the Uki fishing port area. In the South?West part of the Tachibana Bay, the south dip fault which seemed to be dislocation of Kanahama origin was confirmed for 7,000m. An active fault development process will be described in detail by analyzing high resolution data. It was interpreted as single fault formation, but it became clear to develop while presenting some changes.The quantity of tomographic displacement of the Bay of Tachibana northern part is 0.1-0.3m /1000 years when based on a K-Ah reflector.
Northern part of Shimabara Bay: We planned it and performed the line of the N-S direction of about 100m intervals in a small range of 1.2*1.2km in this study sea area. Because there is not a direct sample data showing the generation(age) of this level, the acoustic stratification is not apparent, but we can fined many dislocation from lower to the surface layer in this area. All of the fault show the character of E-W strikes and dips northward, and it is traceable for a distance of 60 0m.The structure similar to these fault was obtaind in the other findings such as short multichannel sonic survey.

Keywords: Active fault, Shimabara Peninsula, Tachibana Bay, Shimabara Bay, K-Ah